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EXAMINER	
MANCHO, RONNIE M	

ART UNIT	PAPER NUMBER
3664	

NOTIFICATION DATE	DELIVERY MODE
03/18/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docket_ip@pillsburylaw.com

Office Action Summary	Application No.	Applicant(s)	
	10/633,488	COX ET AL.	
	Examiner	Art Unit	
	RONNIE MANCHO	3664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 February 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10,15-19,23-26,30,31 and 34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10,15-19,23-26,30,31,34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/12/10 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 10, 18, 19, 23-26, 30, 31, 34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 10, 18, 25 call for, "identifying a plurality of grid points *located a predetermined distance from the reference location*", "determining an *average height of the receiver based on elevation information associated with the plurality of grid point*". The limitations have no support in the original disclosure, emphasis added.

Claims 10, 18, 25 further call for "determining an average height error value based on the elevation information associated with the plurality of grid points and the average height of the receiver".

As noted the original disclosure has no support for the limitations. Applicant's disclosure section 024 calls for "a fixed height h", "fixed value of h", and an "average value of h". The said section further calls for "*Error in the fixed h*", NOT -- average height error value based on the elevation information associated with the plurality of grid points and the average height of the receiver -- as claimed. Thus there is no support for the claimed "*determining an average height error value based on the elevation information associated with the plurality of grid points* ***and*** *the average height of the receiver*", emphasis added.

This is new matter,

The rest of the claims are rejected for depending on a rejected base claim.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 10, 15-19, 23-26, 30, 31, 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 19 and 26, the applicant recites, "a maximum height of a satellite position receiver", "a minimum height of a satellite position receiver". It is not clear what all is meant and encompassed by "maximum" and "minimum". The terms are relative terms and do not particularly and distinctly set forth the meets and bounds of "maximum" and "minimum". Is the maximum or minimum 3m or 4m or 100m? How does one determine if the maximum or

minimum has been reached or has not been reached? Thus the metes and bounds are not set forth.

Independent Claims 10, 18, 25, 34 call for "average height of the receiver", "average height error value". It not clear what height applicant is referring to. What "average height error value" is applicant referring to? Is it the height of a satellite from the earth, the height of a mountain? How are these two heights distinguished from each other?

Claims 18, 19, 23 recite --a means plus function-- limitation. Applicant does not identify the claimed means.

Dependent claims 12-31, 34-44 are rejected for depending on a rejected base claim and for also having the same deficiency as the rejected base claim.

The rest of the claims are rejected for depending on a rejected base claim

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 10, 15-19, 23-26, 30, 31 are rejected under 35 U.S.C. 102(b) as being anticipated by P. Ptasinski et al (Jounal of Navigation, 2002, chapter 55, pages 451-462).

Regarding claim 10-31, 34 are, Ptasinski et al disclose a method of determining the location of a receiver (figs. 3&4) in recipient of at least three positioning signals, comprising:

identifying a reference location (pages 452-456) with the at least three positioning signals;

identifying a plurality of grid points located a predetermined distance from the reference location (figs. 1&2; pages 452, 453);

determining an average height of the receiver based on elevation information associated with the plurality of grid points (figs. 1&2; pages 452, 453);

determining an average height error value (altitude error, pages 452, etc) based on elevation information associated with the plurality of grid points (figs. 1&2; pages 452, 453) and the average height of the receiver (pages 452-454);

deriving at least three simultaneous equations associated with the at least three positioning signals (pages 452-456);

solving the at least three simultaneous equations (pages 452-456) with the average height of the receiver and the average height error value that results in a position and a corresponding horizontal error ellipse (figs. 1, 2);

fitting a two-dimensional polynomial to the corresponding horizontal error ellipse (figs. 1&2); and

solving the at least three simultaneous equations and the two dimensional polynomial that results in an altitude of the satellite positioning receiver (pages 453-456).

Regarding claim 15, Ptasinski et al disclose the method of claim 10, further include: acquiring another height using variables from the two dimensional polynomial; and comparing the difference between the other height and altitude to a predetermined threshold (pages 453-456).

Regarding claim 16, Ptasinski et al disclose the method of claim 15, where the predetermined threshold is 100 meters (pages 453-456).

Regarding claim 17, Ptasinski et al disclose the method of claim 10, where the receiver is located in a server (pages 453-456).

Regarding claim 18, Ptasinski et al disclose the satellite positioning receiver apparatus (figs. 3&4) in recipient of at least three positioning signals, comprising:

means for identifying a reference location (pages 452-456) with the at least three positioning signals;

means for identifying a plurality of grid points located a predetermined distance from the reference location (figs. 1&2; pages 452, 453);

means for determining an average height of the receiver based on elevation information associated with the plurality of grid points (figs. 1&2; pages 452, 453);

means for determining an average height error value (altitude error, pages 452, etc) based on elevation information associated with the plurality of grid points (figs. 1&2; pages 452, 453) and the average height of the receiver (pages 452-454);

means for deriving at least three simultaneous equations associated with the at least three positioning signals (pages 452-456);

means for solving the at least three simultaneous equations (pages 452-456) with the average height of the receiver and the average height error value that results in a position and a corresponding horizontal error ellipse (figs. 1, 2);

means for fitting a two-dimensional polynomial to the corresponding horizontal error ellipse (figs. 1&2); and

means for solving the at least three simultaneous equations and the two dimensional polynomial that results in an altitude of the satellite positioning receiver (pages 453-456).

Regarding claim 19, Ptasinski et al disclose the apparatus of claim 18, wherein the determining an average height means further includes: means for identifying one of a minimum height and a maximum height; and means for setting the height error equal to the absolute value of the difference between the one of the minimum height and the maximum height and the average height (pages 452-456).

Regarding claim 23, Ptasinski et al disclose the apparatus of claim 18, further including:

means for acquiring another height using variables from the two dimensional polynomial; and means for comparing the difference between the other height and altitude to a predetermined threshold (pages 452-456).

Regarding claim 24, Ptasinski et al disclose the apparatus of claim 23, where the predetermined threshold is 100 meters (pages 452-456).

Regarding claim 25, Ptasinski et al disclose a machine-readable signal bearing medium (figs. 3&4) for satellite positioning receiver apparatus containing a plurality of machine-readable signals, comprising:

identifying a reference location (pages 452-456) with the at least three positioning signals;

identifying a plurality of grid points located a predetermined distance from the reference location (figs. 1&2; pages 452, 453);

determining an average height of the receiver based on elevation information associated with the plurality of grid points (figs. 1&2; pages 452, 453);

determining an average height error value (altitude error, pages 452, etc) based on elevation information associated with the plurality of grid points (figs. 1&2; pages 452, 453) and the average height of the receiver (pages 452-454);

deriving at least three simultaneous equations associated with the at least three positioning signals (pages 452-456);

solving the at least three simultaneous equations (pages 452-456) with the average height of the receiver and the average height error value that results in a position and a corresponding horizontal error ellipse (figs. 1, 2);

fitting a two-dimensional polynomial to the corresponding horizontal error ellipse (figs. 1&2); and

solving the at least three simultaneous equations and the two dimensional polynomial that results in an altitude of the satellite positioning receiver (pages 453-456).

Regarding claim 26, Ptasinski et al disclose the machine-readable signal bearing medium of claim 25, wherein the determining an average height means further includes:

identifying one of a minimum height and a maximum height (pages 452-456); and

setting the height error equal to the absolute value of the difference between the one of the minimum height and the maximum height and the average height (pages 452-456).

Regarding claim 30, Ptasinski et al disclose the machine-readable signal bearing medium of claim 25, further including:

means for acquiring another height using variables from the two dimensional polynomial (pages 452-456); and

means for comparing the difference between the other height and altitude to a predetermined threshold (pages 452-456).

Regarding claim 31, Ptasinski et al disclose the machine-readable signal bearing medium of claim 30, where the predetermined threshold is 100 meters (pages 452-456).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over P. Ptasinski et al (Jounal of Navigation, 2002, chapter 55, pages 451-462) in view of Hancock (6202023).

Regarding claim 34, Ptasinski et al disclose a server (fig. 4), comprising:

a transceiver (figs. 3&4) that receives a plurality of satellite code phases (pages 454-457);

a memory (figs. 3&4) with digital terrain elevation data (pages 454-457); and

a controller (figs. 3&4) that processes the plurality of code phases and accesses the digital terrain data in memory with an initial height to determine a location indicated by the plurality of satellite codes and the digital terrain data (pages 454-457);

a message containing the location data sent from the transceiver;

a horizontal error ellipse parameter (figs. 1&2) in an altitude equation that form an error ellipse having a major axis and a minor axis that corresponds to an altitude error about the initial height (pages 452-456); and

a plurality of points along the major axis and the minor axis that form a grid of grid points that the controller accesses the digital terrain elevation data in memory at the grid points (pages 452-457).

Ptasinski disclose the points along the major axis and the minor axis, but was no quite clear about a polynomial surface fit over the points. However, Hancock teaches of a two dimensional polynomial surface fit over a grid of points (Figs. 1, 2; cols. 6, etc).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ptasinski for the purpose of allowing faster database searches of position (col. 4, lines 1+).

Response to Arguments

10. Applicant's arguments filed 1/12/10 have been fully considered but they are all not persuasive.

Applicant argues that the term, "maximum" has being deleted or amended from the claims. The examiner respectfully disagrees and notes that claim 19, 26 still contain the rejected limitation. It is further noted that the specification sections 027, 089 disclose the terms "maximum" and "minimum", but how does one determine if the maximum, minimum error has been reached or has not been reached? The claims and specification do not provide a standard or suggestion on how to determine "maximum residual error" as claimed. Moreover, applicant

copies the term from the specification and pastes it in the claims. The terms, "maximum" and "minimum" are relative terms and do not particularly and distinctly set forth the meets and bounds of "a maximum error" or "minimum error" as claimed. Is "maximum", "minimum" 3m or 4m or 100m? The bounds are not set forth.

As further noted, Claims 10, 18, 25 call for, "identifying a plurality of grid points *located a predetermined distance from the reference location*", "determining an *average height of the receiver based on elevation information associated with the plurality of grid point*". There is further no disclosure of "'average height of the receiver". The height applicant is referring to in the specification is different from that claimed. The limitations have not support in the original disclosure, emphasis added.

Claims 10, 18, 25 further call for "determining an average error value based on the elevation information associated with the plurality of grid points and the average height of the receiver". As noted the original disclosure has no support for the limitations. Applicant's disclosure section 024 calls for "a fixed height h", "fixed value of h", and an "average value of h". The said section further calls for "*Error in the fixed h*", NOT -- average height error value-- as claimed. Thus there is no support for the claimed "determining an average height error value *based on the elevation information associated with the plurality of grid points and the average height of the receiver*", emphasis added.

This is new matter,

Applicant further argues the prior art Ptanski disclose the limitations in the claims. The examiner respectfully disagrees and notes that applicant is not addressing all sections cited by the examiner in the prior art. Applicant's argument that the prior art does not disclose an ellipsoid

and the ellipsoid is not an error ellipse is not convincing. The examiner respectfully notes that applicant does not provide a definition of "error ellipse" as claimed. Applicant admits that the prior art, Ptasinski discloses an ellipsoid. The examiner notes that an ellipsoid is another term for an ellipse. To the extent that the applicant is arguing that the terms used in the claims must match the terms in the prior art, the examiner disagrees and notes that MPEP recognizes that the subject matter of the claims need not be described literally (i.e. using the same terms or in *haec verba*) in prior art in order for prior art to anticipate the claims. The ellipse disclosed by Ptanski is an "error ellipse" because it is a model of the earth and does not present the exact dimensions of the earth as presents inaccuracies in locating a pseudo satellite at the center of the earth.

The applicant argues that the prior art, Ptasinski does not disclose "a grid of grid of points" in figs. 1 and 2, pages 452 and 453. The examiner notes that although figs. 1 and 2 do not clearly show a grid of grid of points, Ptasinski (figs. 5-10) mentions a digital map, well known to show a grid of grid of points (since digital is made of grids). However, in the 103 rejection above the second prior, Hancock discloses a two dimensional polynomial surface fit over a grid of points (Figs. 1, 2; col. 4, lines 1-10; cols. 6, etc). The drawings speak for themselves.

Applicant further argues that the prior art does not disclose "points along the major axis and minor axis that correspond to the altitude error". The examiner disagrees and notes that this particular limitation is not claimed. The limitation in the claims read "a horizontal error ellipse parameter in the altitude equation that form an error ellipse having a major axis and a minor axis that correspond to the altitude error".

Applicant then argues that since Ptasinski fails to disclose "a grid of grid of points" Ptasinski does not disclose the limitation, "a horizontal error ellipse parameter in the altitude equation that form an error ellipse having a major axis and a minor axis that correspond to the altitude error;

a plurality of points along the major axis and the minor axis that form a grid of grid points". The applicant further argues that Ptasinski discloses *a difference between spheres* with one having a center at the center of the earth. The examiner disagrees and notes that there are no *spheres* in the prior art as insisted by the applicant, *plural tense emphasized.* The prior art Ptasinski shows an ellipse to represent the shape of the earth (see fig. 1, page 452). When calculating a 3-D GPS position solution, the earth is assumed to be a *sphere, singularity emphasized.* Now to compute a GPS position on the surface of the earth, Ptasinski notices that an error will occur due to the earth not being a sphere and thus compares the difference between the points on the ellipsoid and the sphere to obtain an approximate error between the positions on the ellipse and positions on the sphere. Thus the points on the ellipse form an error ellipse since they are approximations compared to a spherical earth. Ptasinski uses the approximations in an altitude-aiding equation to compute an accurate 3-D GPS position (see pages 452-454). The error ellipse shown in fig. 1 has a major axis and a minor axis. As already indicated, the error when the sphere is compared with the ellipse results in an altitude error. Therefore, fig. 1 shows a plurality of points along the major axis and the minor axis. Ptasisnksi shows latitudes and longitudes, thus it can be assumed that the points on the longitudes and latitudes form "a grid of grid points". However, "a grid of grid points" is clearly shown in Hancock (fig. 1, cols. 4 and 6). Thus the prior art anticipate the claims.

Applicant failed to address Hancock as disclosing "a grid of grid points".

Applicant further argues that the prior art does not disclose fitting a two-dimensional polynomial to a horizontal error ellipse. The examiner disagrees and notes that Ptasinski disclose a polynomial (the sphere of pages 452, 453) fitted over an error ellipse (figs. 1& 2) to obtain an error in position calculation in an altitude aiding equation (see pages 452-454). The error ellipse has horizontal and vertical dimensions, thus Ptasinski disclose a horizontal error ellipse.

Thus the prior art anticipate the claims.

Communication

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RONNIE MANCHO whose telephone number is (571)272-6984. The examiner can normally be reached on Mon-Thurs: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tran Khoi can be reached on 571-272-6919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ronnie Mancho/
Examiner, Art Unit 3664

3/15/2010